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ABSTRACT

Designed for secondary vocational agriculture students, this text provides an overview of selecting and evaluating beef cattle in Future Farmers of America livestock judging events. The first of four major sections addresses topics such as the ideal beef animal, selecting steers, selecting breeding animals, studying the animal systematically, and comparing conformation. Section 2, Giving Reasons, includes a discussion of rules for giving oral reasons, how to take notes and outline reasons, and judging terms and how they are used in giving reasons. In addition, a sample set of reasons is provided. The final two sections describe procedures for grading slaughter cattle and feeder cattle. Tables for calculating beef cattle grades are appended. (LRA)

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ED195694

BEEF CATTLE

SELECTION AND EVALUATION

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Frank R. Stover
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INTRODUCTION TO SELECTING AND EVALUATING BEEF CATTLE

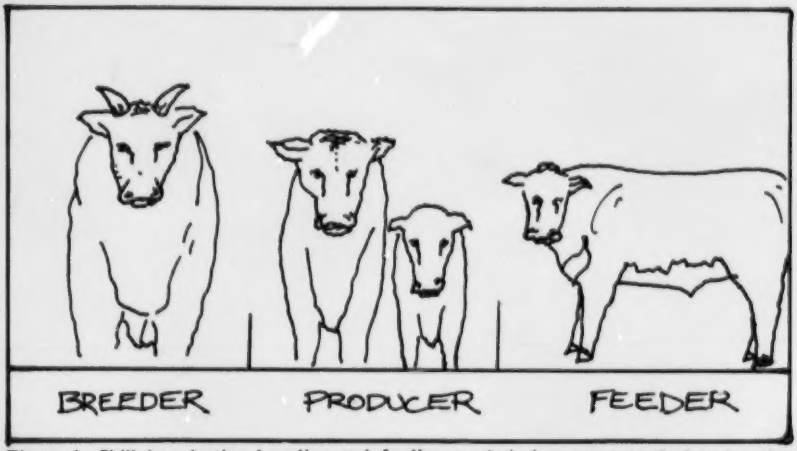

Figure 1. Skill in selecting breeding and feeding stock is important to the breeder, the producer, and the feeder.

Why Select and Evaluate Beef Cattle?

Judging is used daily by all livestock producers in selecting herd sires, selecting replacements, setting up a breeding program and determining when livestock are ready for market. It's impossible to be a good livestock producer without first being a good livestock judge. This section will help you learn the principles and methods of judging live animals.

Training in beef cattle selection and evaluation can play an important role in your education. Practice in making individual decisions and supporting them with oral reasons offers training in problem solving that will be used throughout your life. The practice you get in thinking and talking in front of people during the course of giving reasons will also be a great benefit during later life.

Livestock judging teams develop a competitive spirit among team members as well as competition among teams.

From an economic viewpoint, the major reason for being in the cattle production business is to make a profit. Factors such as nationwide supply and demand of both cattle and grains influence profits. These factors usually are difficult for the cattle farmer to control. Most management practices, however, can be controlled to some degree by the cattle farmer. Selecting breeding or feeding stock is a key management practice and one which the farmer can control, if he/she is properly informed or skilled in judging.

The cattle producer (the cattle farmer who maintains his/her own herd of cows and bulls to produce feeder cattle) must keep high quality breeding stock (bulls and heifers or cows) in order to produce high quality feeder calves (calves which he/she may

sell at feeder cattle sales or keep for feeding out). If the producer does not maintain high quality breeding stock, profits will be reduced either at the feeder calf sale or later when the cattle are sold for slaughter – when calves are about 1,000 lbs. (454 kg). A difference of one grade at the feeder calf sale can spell the difference between a handsome profit or a frustrating loss--the same is true of slaughter weight cattle.

Selecting breeding stock is, of course, extremely important to the cattle breeder (the cattle farmer who sells breeding stock to the producers). The breeder must know the type of cattle which will "turn a profit" for the producer; otherwise his/her breeding stock will not command high prices.

And finally, the feeder (the cattle farmer who buys feeder cattle at 300-600 lbs. or 136-272 kg) must know the type of feeder calf which will "turn a profit" when sold at market weight. Actually the feeder must know what the packer wants. It may be that the packer does not prefer or cannot afford to pay premiums for cattle of high quality or yield grades and may actually prefer to balance his/her purchases with a certain percentage of each of these grades. Therefore, the feeder must know what the packer is wanting so that he/she can determine what price to pay for a given grade of feeder calves. If the feeder purchases feeder calves from a graded feeder calf sale (one in which county extension agents have already separated the calves to be sold by USDA grades), it is not so important that he/she recognize grades. However, if the calves are purchased at other markets or purchased on the farm, such skills are extremely important.

Qualifications of a Good Livestock Judge

To be a good livestock judge you should have the following qualities:

1. A clearly defined idea or "mental picture" of the correct types
2. The power of quick and accurate observation
3. Sound judgment (ability to weigh and evaluate what you see)
4. Courage and honesty
5. A desire to excel
6. The ability to give good reasons

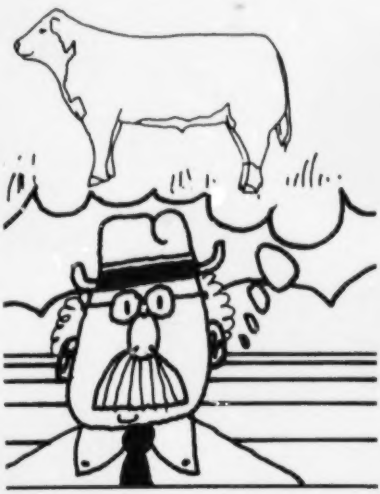

Figure 2. Form a mental image of an ideal animal.

How to Begin

Before you start judging livestock, form a mental picture of an ideal animal. Study pictures of ideal animals--available through your breed associations. Make outlines of these animals; draw in the retail cuts; then

visit your local grocery store and get the price of each of these retail cuts. This will help you understand why the ideal animal is ideal.

Learn from pictures or from live animals all the parts of these animals and be able to identify them on the live animals. This will add to your storehouse of useful, understandable livestock terms that will be needed in giving reasons as well as talking livestock to others.

When you master these things you are ready to start placing classes.

In judging workouts and contests, you will be expected to place four animals per class. To get a good comparison among the four animals, it is necessary to see all four of them at one time. To do this, you must stand at least 25 to 30 ft. (7.6 to 9m) away from the class.

Always keep the ideal animal in mind when you are placing a class of livestock. When you get your first look at a class, try to "break" the class by finding and making your easiest placing first. It may be a top animal, a bottom animal, or it may be breaking the class into two pairs.

Train yourself to place livestock from a distance without the aid of handling. You have *seen* more livestock than you have *handled.* Therefore, your eyes should be more accurate.

Study the *whole* animal carefully. Do not try to place on little things. Instead locate the big things, such as "high-priced cuts," that are closely related to the economics of livestock production.

In any contest or practice, *do your own work.* You should learn early to depend on your own judgment and not someone else's. You must develop confidence in yourself before others will have confidence in you. You can improve your judging ability only by making your own decisions and doing your own work.

In official judging contests you will be given a card with your name on it, or you will be given instructions on this point.

The Ideal Beef Animal

Judging beef cattle is not difficult. However, you must understand the beef business and know what you are looking for before you start. To know what you are looking for you must:

1. know what the ideal animal looks like; see Figure 3.
2. know the parts of the animal; see Figure 4.

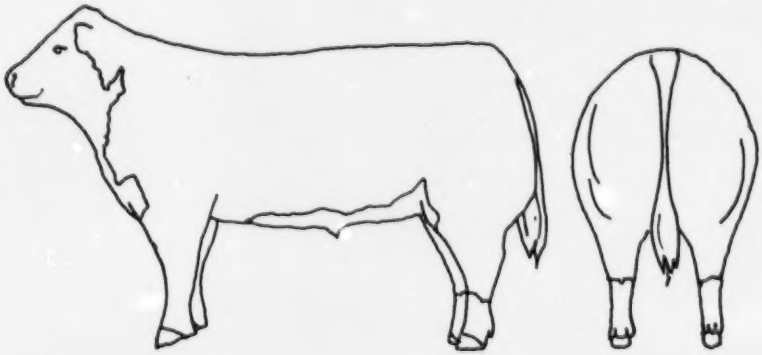

Figure 3. The "ideal" beef animal.

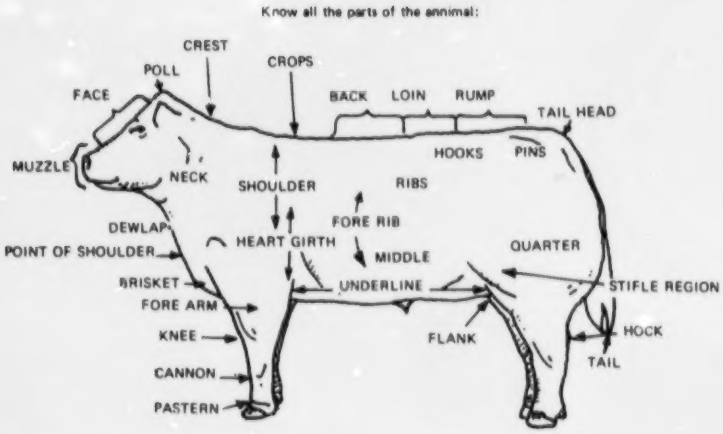

Figure 4. The parts of the beef animal.

Selecting Steers

Important factors to consider in selecting steers are conformation, muscling, finish, carcass merit, yield, quality, balance, style, and smoothness.

CONFORMATION–Beef conformation refers to the combination of characteristics which makes an animal useful for the production of beef. A steer of good conformation is thick, moderately deep bodied, straightlined, and well balanced. It should be emphasized that the modern steer is moderately deep bodied and has moderately long legs, but should not be extreme either way.

MUSCLING–Thickness, depth and fullness of quarter and width of back (without excess fat), loin and rump are indications of muscling. Muscling or natural fleshing is inherited through the sire and dam.

FINISH–Finish refers to the amount of fat cover. The term "finish" should be used in market classes only. Finish should be smooth and uniform over the animal and not patchy or uneven. Finish should be firm to the touch. A moderate, evenly finished steer is more desirable than one that is too fat or too thin. The correct amount of finish on a 1000 pound steer should not be over .6 of an inch of fat at the 12th rib.

CARCASS MERIT–Beef animals should be judged from the standpoint of the kind of carcass they will produce. Give preference to those steers which should produce thick, meaty, correctly finished carcasses that are well muscled in the regions of the high-priced cuts. The carcass should grade Choice.

DRESSING PERCENT–Dressing percent is the proportion of the carcass weight to the live weight of the animal. The factors which affect dressing percentage are: conformation, finish, quality, and the amount of "fill" or paunchiness. Cattle with trim middles will yield higher than cattle with wasty middles. Yield is also increased by good conformation, finish, and refinement of head, hide and bone.

QUALITY–Quality refers to refinement of head, hide, hair, and bone. We want a steer with medium bone, a moderately refined head, a thin, pliable hide and a fine, soft hair coat.

BALANCE–Balance implies correctness of structure and a desirable proportion of body parts.

STYLE–A stylish animal is attractive and displays alertness and shows to its best advantage.

SMOOTHNESS–Smoothness implies freedom from roughness of finish or in skeletal structure. Roughness of finish usually occurs along the loin or around the tailbone, and roughness of skeletal structure is most commonly found at the hooks or the shoulders. Fat steers will tend to have a smoother overall appearance than a properly finished, heavily muscled steer.

Selecting Breeding Animals

When judging breeding cattle you need to consider several important points in addition to those listed for judging steers. These are: condition, size, feet, legs and bone, breed character, and sex character.

CONDITION–This refers to the amount of fat cover and in breeding class the term "condition" should be used rather than finish. In judging breeding cattle, muscling is primary and condition is secondary in importance. Breeding animals should not carry much condition.

SIZE–Adequate size for age is very important. A good big beef animal has a definite advantage over a good small one. However, do not sacrifice everything else (structural soundness and muscling) for size alone and do not confuse height alone for size. Keep in mind that size is one of several important judging factors.

FEET, LEGS, AND BONE–Strong straight legs with heavy bone are a must in breeding cattle. Heavy bone in an animal is associated with heavy muscling. The legs should be squarely placed on the corners of the body. The feet should be of ample size and depth to form a strong foundation. The animal should be able to move freely and alertly without any evidence of unsoundness.

SEX CHARACTER–is the appearance that distinguishes between the sexes. The bull should be masculine as evidenced by increased development of the front quarters, a bold, strong head, a thick neck and a massive, powerful appearance. The female should be more refined with a lighter shoulder and neck and more refinement of the head and bone. The characteristics of the steer come between those of the bull and female.

BREED CHARACTER–is shown in head shape and general appearance or the color markings of the particular breed. Study breed pictures for the characteristics of the different beef breeds.

Studying the Animal Systematically

As you judge beef cattle, have in mind a definite system that works for you and lets you analyze the class more effectively. After you have made a careful analysis of the class, your first impression of the class is usually the best one. See Figures 5, 6, and 7.

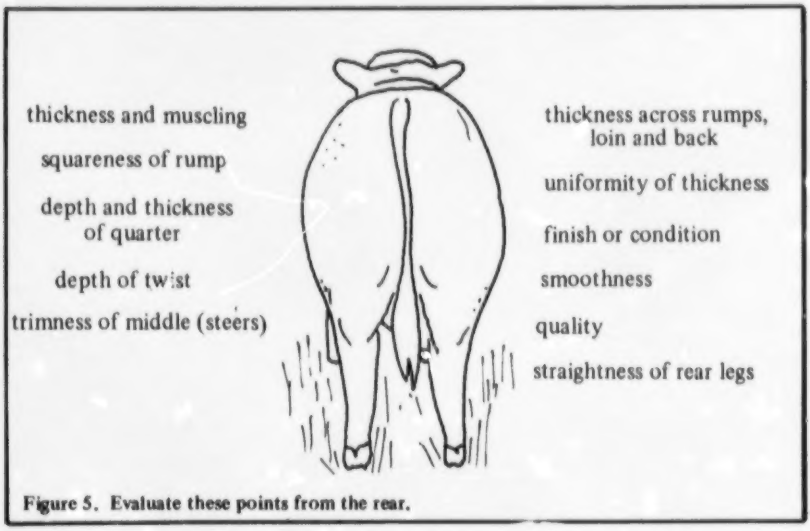

Figure 5. Evaluate these points from the rear.

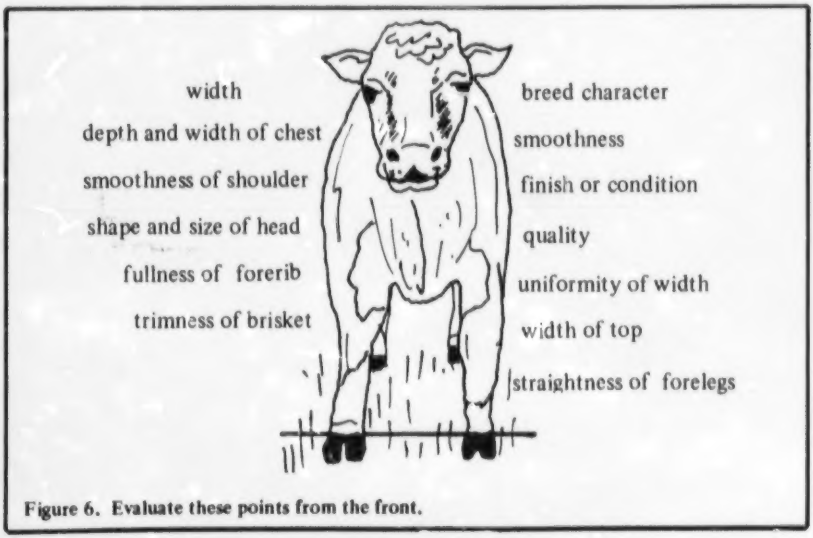

Figure 6. Evaluate these points from the front.

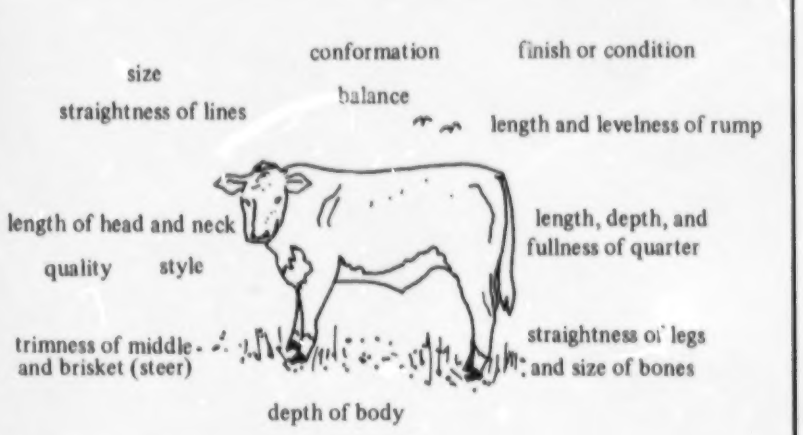

Figure 7. Evaluate these points from the side.

As the class is walked, check especially for soundness of feet and legs and firmness of finish. This is the best time to size up the class because cattle look the most natural when walking.

You will have an opportunity to handle the steer classes to determine the amount and quality of finish. Start at the shoulder and feel with one hand over the shoulder, ribs, back, loin, and rump. It takes both careful observation and proper handling to do the best job determining the degree and smoothness of finish. As you feel for finish, keep your fingers together and let your mind accept what you feel.

In breeding classes when handling is not permitted, you will be given an opportunity to make a close inspection. In this case your observations should be to check the width of top both from the rear and front views. You will not gain much from close inspection from the side view over what can be seen from a distance.

Make your easiest placing first. This may be the top animal or the bottom animal or you may decide that the class has two pairs--a top and a bottom pair. You should note the important things and make your [illegible]ngs accordingly.

While handling, check for:

- amount and smoothness of finish
- smoothness of shoulder
- length of rump
- thickness of rump
- thickness of lower quarters
- quality of hide

Comparing Conformation

BACK AND LOIN

The back, loin, and rump should show evidence of muscling. Heavily muscled cattle need not be uniform in width of top--may not be full and smooth behind the shoulders and will be wider over the loin. A back and loin that is narrow, uneven in width, or weak, is undesirable.

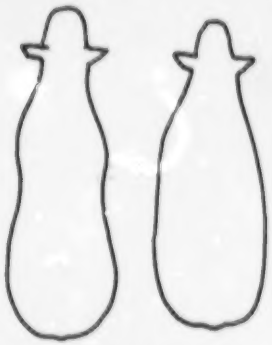

Figure 8. The back and loin.

RUMP

The rump should be long, square, and level. Length of rump contributes to overall balance and higher yield in the high-priced-cuts area. A short or drooping rump is objectionable.

Figure 9. The rump.

ROUND

The round is deep, full and bulging on a desirable animal. The thickest part of the body will be through the center of the quarters. When viewed from the rear, the round is bulging from top to bottom and cut up in the twist.

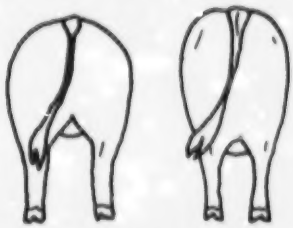

Figure 10. The round.

NECK AND SHOULDERS

The neck should be of moderate length and blend in smoothly with the shoulder. Shoulders that are heavy and coarse or open over the top with blade standing out from the body are undesirable. A heavy dewlap and a crested neck are undesirable in a steer, and usually mean that he was too old when castrated. In bulls, masculinity and ruggedness are desired; whereas in cows, femininity is important.

Figure 11. The neck and shoulders.

DEPTH OF BODY

The body should be moderately deep, rectangular and well balanced. The forerib region should be moderately deep with good spring of rib. A flat-ribbed, shallow-bodied beef animal is undesirable. Extreme depth of forequarters is also undesirable because this contributes to higher yields of low-priced cuts.

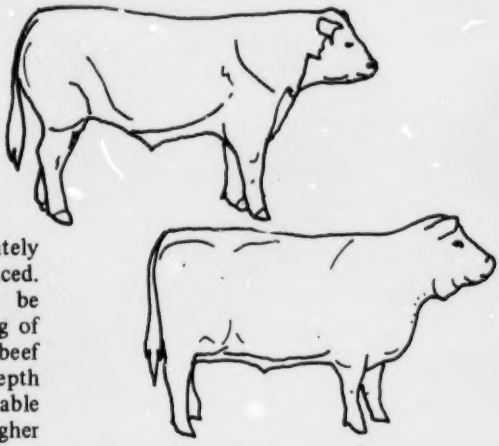

Figure 12. The body.

HEAD

The head should be broad between the eyes and wide down to the muzzle. A short, wide head or a long, narrow head is undesirable. A long, narrow head often is followed by a tall, narrow, upstanding, rangy animal.

Figure 13. The head.

CHEST

The chest should be of moderate depth and width. The forelegs are placed wide apart and under the corners of the body. Good width between the forelegs is a sign of strong constitution and deep fleshing qualities. An animal with closely set forelegs always lacks chest capacity and balance.

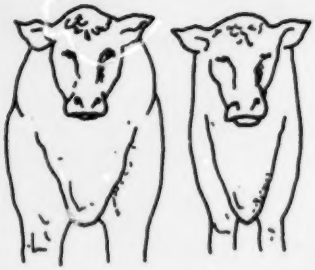

Figure 14. The chest.

FORELEGS

From the front view, the forelegs should be set wide apart and standing straight and square on the feet. From the side the legs should be straight with strong pasterns. The cannon bone (below the knee) of the front leg is the best place to observe bone substance or size. Usually cattle with large-sized cannon bones will be big framed and heavily muscled.

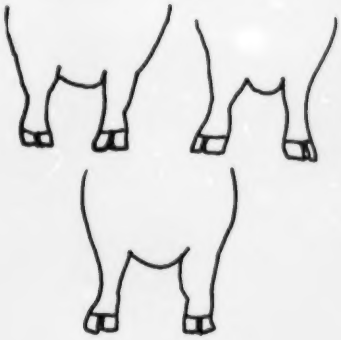

Figure 15. The forelegs.

REAR LEGS

From the rear view, the rear legs should be set wide apart so that a plumb line from the pin bone would pass through the center of the hocks and between the dewclaws. From the side, the legs should be straight so that this same plumb line dropped from the pin bones would lie along the rear cannon bone. The hind legs should not

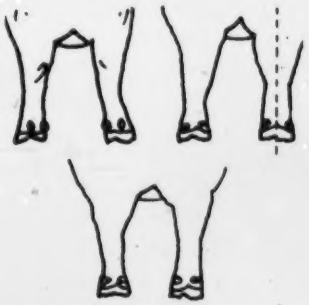

Figure 16A. The rear legs.

be cowhocked (hocks close together); sicklehocked (too much set to the hocks); nor postlegged (hocks too straight). The hoofs should be of ample size and depth. The animal should stand and move freely without evidence of unsoundness. Correctness of feet and legs and ability to walk freely carry more emphasis in breeding classes.

Figure 16B. The rear legs.

Using the FFA Judging Card

The judging card lists all 24 possible placings for animals within a class. From the placings listed, select one set which represents your decision on how the class should be placed. Circle that placing, making it very clear which placing you choose. See Figure 18.

In an official contest, be sure to write the class name on each card and also be sure your contestant number is on the card. Do not write your name on cards used in contests. Cards will be identified by contestant numbers only.

The placing cards are graded on the basis of 50 points for placing the class and 50 points for the oral reasons given. Reasons are not given on all classes, however, and 50 points would represent a perfect score on placing the class.

The variations from a perfect score are based on the pairing of the four animals within a class. For example, each class has three pairs, a top pair, a middle pair, and a bottom pair. The margin of difference between each of the three pairs is determined by the official judge. These margins or cuts are determined by the degree of difficulty one encounters in making the placing. Obviously easy placings have larger cuts and close placing have smaller cuts.

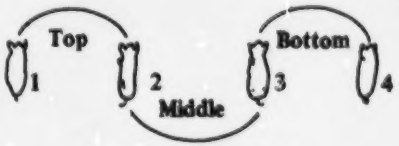

Figure 17. A class of four animals is broken into three pairs - a top pair, middle pair, and bottom pair.

The total of all three cuts cannot exceed 15. Example: a class placed 2-3-4-1 has cuts of 7-5-3. Total of 7, 5, and 3 = 15. If cuts total 15, the middle cut cannot be larger than 5. If they total 14, the middle number cannot be larger than 8.

A contestant makes six decisions when ranking four animals. This method of scoring penalizes a contestant for the amount of the margin between the two animals involved in each incorrect decision.

(Contestant Number)

(Class Name)

(Class Number)

Circle Your Placing

SOUTH CAROLINA
ASSOCIATION
OF
FUTURE FARMERS
OF
AMERICA

Judging Card

1234
1243
1324
1342
1423
1432
2134
2143
2314
2341
2413
2431
3124
3142
3214
3241
3412
3421
4123
4132
4213
4231
4312
4321

Figure 18. The FFA Judging Card.

Using the Female Selection Card

Female selection is a practical exercise in culling. Form 14 is used by contestants in completing this exercise.

Contestants will be required to select the four best animals from a class of eight, using visual appraisal and performance data. Performance data to be provided orally or in writing will include weight for age and adjusted 205-day weaning weights.

FFA Livestock Contest **Form 14**

Female Selection **Class**_____

Contestant Number_____

Circle the numbers of the four animals you want to keep

1	2	3	4	5	6	7	8
⌐¬	⌐¬	⌐¬	⌐¬	⌐¬	⌐¬	⌐¬	⌐¬

Total Score _____

Contest officials will assign a point value to each one of the individual animals, giving the most points to the most desirable animal and the least points to the least desirable animal. If the contestant selects the best four animals full credit will be given.

Animal Numbers – Sample For Scoring

8	7	6	5	4	3	2	1	Sample Class
(18)	(13)	(11)	(8)	(7)	(4)	(3)	(0)	Point Values

Animal Numbers Selected

					Score
Student A	6 (11)	8 (18)	4 (7)	2 (3)	39
Student B	8 (18)	7 (13)	6 (11)	5 (8)	50
Student C	7 (13)	6 (11)	5 (8)	1 (0)	32

Figure 19. The Female Selection Card.

GIVING REASONS

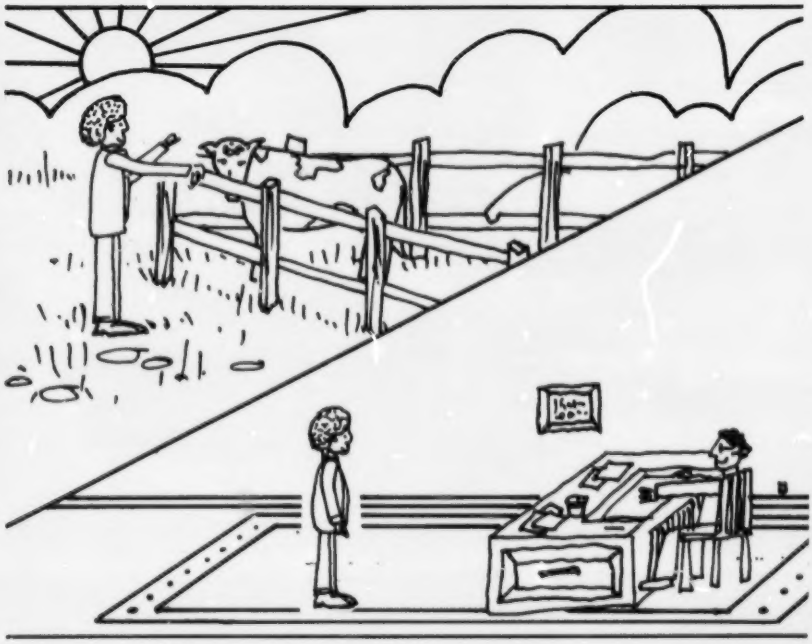

Figure 20. Giving reasons is 50% of the contest score.

Introduction

The main objective of reasons is to let you tell why you placed the class as you did. You give reasons to compare the differences in the animals you have judged. The ability to express and defend your decision is one of the most important parts of judging. Your reasons should be short but complete, accurate, interesting and sincere. You will want to present them in a pleasing, confident, and organized manner, so that they are easy to follow and understand. Reasons should emphasize the most important considerations.

Giving Reasons Will Help You To:

- Develop a system for analyzing a class of livestock
- Develop your memory
- Think more clearly on your feet
- State your thoughts more clearly
- Improve your speaking poise and presentation
- Improve your voice

How Good Are Your Reasons?

Reason scores may range from 0 to 50 points per class–the same as your placing score. The judge will determine the value of your reasons by evaluating the following:

ACCURACY–You must tell the truth. This means that you need to see the important reasons in the class correctly. Accuracy is very important. You will lose points for incorrect statements.

PRESENTATION AND DELIVERY–Have something to say and say it as though you mean it. Present your reasons in a logical, well organized manner that is pleasant to hear and clear and easy to follow. If reasons are poorly organized, the value of accuracy may be lost because most of what you say does not "get through" to the listener. Speak slowly and clearly in a conversational tone. Speak loudly enough to be heard, but avoid shouting and talking too rapidly. Use well organized statements and correct grammar. Emphasize the important differences in a comparing manner.

COMPLETENESS–Include all the important differences in your reasons. Include admissions, reasons and faults for all three pairs. Avoid the comparison of points where there may be room for doubt.

LENGTH–A well organized, properly delivered set of reasons should never be over two minutes in length. Never add doubtful statements just for the sake of lengthening the time of your reasons.

TERMS–Use correct terms. Incorrect terms greatly detract from the value of your reasons. Study and use the terms in this publication.

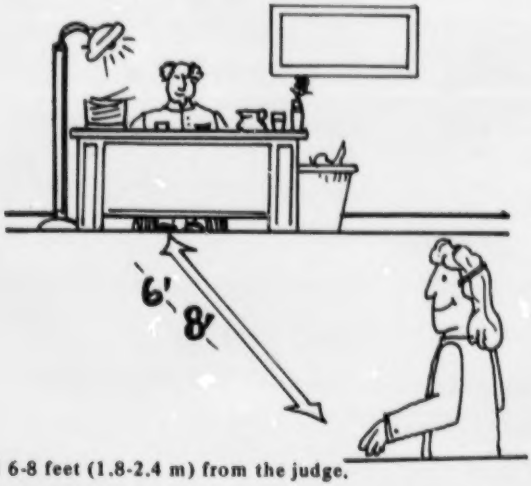

Figure 21. Stand 6-8 feet (1.8-2.4 m) from the judge.

Other Rules for Giving Reasons

Stand 6 or 8 feet (1.8 or 2.4 m) away from the judge as you give your reasons. Stand squarely with your feet spread apart in a comfortable position, and look the judge in the eyes. Be natural, not stiff or mechanical.

Use your reasons card which will be handed to you when you enter the reason room. Hold this card in front of you in a comfortable position so that you can check your numbers on each pair. This procedure avoids mixing your numbers while giving your reasons. Mixing numbers distracts from the value of what you have said.

Be sure you have your reasons well organized so you will not hesitate when you present them to the judge.

Be concise and definite. Don't hunt for things to say. If you don't remember a point, go on to the next pair you want to discuss.

State your reasons with confidence, without hesitation. Talk with enough enthusiasm to keep the judge interested.

On some points, the second animal of a pair will excel the first one. Start off with your admissions (if you have any) on each pair and move on into the reasons why one is superior to two. Do not claim strong points for an animal if they do not exist.

Emphasize the main differences strongly. Present the big differences first on each pair.

End your reasons strongly. Discuss your third pair completely. Give a concise final statement as to why you placed the last animal last.

End your reasons with a statement such as, "For these reasons I placed this class of Hereford steers 1-2-3-4."

Outline of a Set of Reasons

In giving reasons, a class of animals is divided into three pairs; the top pair, the middle pair, and the bottom pair. So the basic outline of a complete set of reasons is as follows: (assume the placing to be 1-2-3-4).

1. State the name of the class and how you placed it.

Top Pair

2. Admissions (if any) for 2 over 1, pointing out any advantages of 2 over 1, using comparative terms.
3. Reasons for placing 1 over 2 using comparative terms
4. Criticisms of 2 in descriptive terms.

Middle Pair

5. Admissions for 3 over 2
6. Reasons for placing 2 over 3
7. Criticisms of 3

Bottom Pair

8. Admissions for 4 over 3
9. Reasons for placing 3 over 4
10. Criticisms of 4
11. Closing statement

How to Take Notes

Make a set of short, simple notes that will help you with your oral reasons. Notes are to be used to study before giving oral reasons to the judge. They should help you recall or remake a mental picture of the class. Do not read or refer to your notes while giving reasons.

Use a small spiral notebook for note-taking. The following is an example of the notes taken on a Polled Heifer class. See Figure 22.

Polled Hereford Heifers

Reasons for Placing	Admit or Grant Placing (3-2-1-4)	Faults
Style, feminine, upstanding balance, feminine head and neck, trimmer brisket and shoulders, thicker lower quarter.	3-2 Long rump	Style feminine brisket shoulder strength of top
Longer body, type, muscling over crops, back loin, Longer squarer rump, more muscling through top of quarters - stood wider	2-1 Length of leg trimmer throat & brisket	length muscling length of loin and rump
Growthier, balance breed character, body capacity, longer deeper quarter, wider on front legs - straighter hind legs	1-4	size scale balance femininity flat poll thickness muscling sickle-hocked

Figure 22. A sample set of notes.

Organizing Your Reasons

For a class of Hereford steers placed 1-2-3-4.

Step 1. I placed this class of Hereford steers 1-2-3-4.

Step 2. In my top pair I admit (grant, realize, or recognize) that 2 was *trimmer in his middle than 1.*

Step 3. But I placed 1 over 2 because he was the heaviest muscled steer in the class. No. 1 was a heavier quartered steer that carried more muscling over his crops, back, loin, and rump than 2. He stood wider in front and rear. He was trimmer in his brisket and firmer in his finish. He carried down into a deeper, more bulging quarter than No. 2.

(In the body of your reasons, you should start with the important general points first, followed by the details to complete your story. Discuss the details in an orderly manner starting on the front of the steer and finishing with the rear. It is important not to use a great many terms in a close succession because the terms come so fast that the judge cannot hear and evaluate all of them. Not more than two or three comparisons should be included in each sentence. Reasons must be made up of complete sentences rather than phrases.)

Step 4. I criticized No. 2 because he lacked the overall muscling and firmness of finish of the No. 1 steer.

(Remember that No. 2 was placed second and you have two more steers below him, so do not criiticize him too severely. However, include enough criticisms to make your reasons complete.)

The same procedure is used on the middle pair and bottom pair. These two pairs may be introduced by, "2 placed over 3 in the middle pair because---" and 'in the bottom pair, 3 placed over 4 because----."

In discussing your pairs don't be too repetitious in the body of your reasons. If you need to make the same comparisons use different terms that have the same meanings. For example, in the first pair you stated that No. 1 was heavier muscled; if this comparison is made in another pair, say that No. 3 is thicker than No. 4.

Always close your reasons by the statement, "For these reasons I place this class of Hereford steers 1-2-3-4." With this statement the judge will know that you have finished your reasons.

In some workouts or contests the judge may ask you questions to clarify a statement you might have made or to bring out an important point you have missed. Correct answers will add to your reason score; incorrect answers will take off. If you do not know the answer to the question(s), say that you do not know.

Judging Terms and How They Are Used in Giving Reasons

On the following pages are examples of favorable comments in judging cattle and examples of reasons. You also need to consider criticisms. If you think of the opposite of some of *these comments*, you will have the criticisms. For example, the opposite of "trimmer middled" might be "wasty through the middle"; "heavier muscled" and "lighter muscled"; or "wider in the forerib" and "flat ribbed."

Comments for Steers

CONFORMATION

Was a more modern, musclar steer
Was a heavier muscled, meatier type steer
Was a straighter lined, trimmer made steer
Was a tighter framed steer showing more balance
Was more uniform in width from end to end

MUSCLING

Showed more natural width and muscling over the back and loin
Carried a bolder spring of rib, wider loin, and squarer rump
Was wider over the back and loin
Was fuller (bolder) in the rib
Was thicker
Had longer, heavier muscled loin
Was a beefier, heavier muscled steer
Had more width through the center of the round
Had a deeper, more bulging round
Was longer, more level and wider over the rump

FINISH

Was a firmer, more correctly finished steer
Was smoother and more uniformly covered
Was a firmer fleshed steer over the back, loin, and ribs
Was more ideally finished
Was superior in his handling qualities
Carried less condition all down his top
Had less finish over the ribs and point of shoulder

QUALITY

Was a trimmer middled steer
Showed more quality and refinement
Was more uniform in width from front to rear
Was a straighter lined, trimmer middled, higher quality steer

CARCASS MERIT

Would yield a meatier carcass
Because he was a heavier muscled, more correctly finished steer
He would yield more desirable carcass
Would yield more of the higher priced cuts

Comments for Breeding Cattle

CONFORMATION

Was a growthier, beefier heifer
Was a roomier middled heifer
Had more feeding and breeding capacity
Was a larger, more rugged heifer
Had more size and capacity
Was a more modern heifer with more length of leg

MUSCLING

Was a growthier, thicker heifer
Showed more size, scale, and thickness
Had more spring of forerib
Was more uniform in width from front to rear

SOUNDNESS

Stood and walked more correctly
Stood more correctly on her (front or rear) legs
Had a more desirable set to her hind legs
Stood on more bone
Stood wider in front (or rear)
Was a freer moving heifer

CHARACTER

Was a more mascuiine fronted bull
Showed more masculinity and ruggedness
Showed more strength and character about the head
Showed more femininity and breed character about her head
Was a nice feminine heifer

QUALITY, BALANCE, AND STYLE

Showed more quality and balance
Had more style, symmetry, and balance
Was smoother through the hooks
Was smoother over the tailhead
Was a more stylish, nicer balanced heifer
Was smoother and trimmer through the shoulders
Was cleaner, trimmer fronted

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Polled Hereford Heifer Reasons

The following is an example of a set of reasons on a class of Polled Hereford heifers placed 3-2-1-4.

This set of reasons is for your study and consideration as to organization and terminology. It is not to be memorized or used as a "canned" set of reasons, because they will not apply to any class you will judge.

I placed this class of Polled Hereford heifers 3-2-1-4.

Concerning my top pair, I admit that 2 was a longer-rumped heifer, but I placed 3 over 2 because 3 was a more stylish, feminine heifer that stood on more desirable length of leg and carried more balance throughout; 3 was more feminine in the head and neck, trimmer in the brisket and through the shoulders, and carried more thickness through her lower quarter.

I fault 2 because she lacked the style and femininity of my top heifer. She was more wasty in the brisket, coarser through her shoulder, and lacked the strength of top of 3.

Coming to my middle pair I grant that 1 stood on more length of leg and was trimmer through the throat and brisket, but I placed 2 over 1 because 2 was a longer-bodied heifer that more nearly followed the type of my top heifer. She carried more muscling over her crops, back, loin, and rump, being especially longer in the loin and longer and squarer over the rump; 2 carried more muscling into the top of her quarters and stood wider on her feet and legs.

I fault 1 because she lacked the length and muscling of 2. She lacked the length of loin and rump.

For my bottom pair I easily placed 1 over 4 because 1 was a growthier, more nicely balanced heifer. She showed more breed character about the head and had more body capacity. No. 1 had more length and depth of quarter. She stood wider on her front legs and straighter on her hind legs.

I placed 4 last in this class and faulted her because she lacked the size, scale, and balance of the other heifers in the class. She lacked the femininity about the front of 1 and was flat in her poll. She lacked the thickness and muscling of the other heifers and was sicklehocked.

For these reasons I placed this class of Polled Hereford heifers 3-2-1-4.

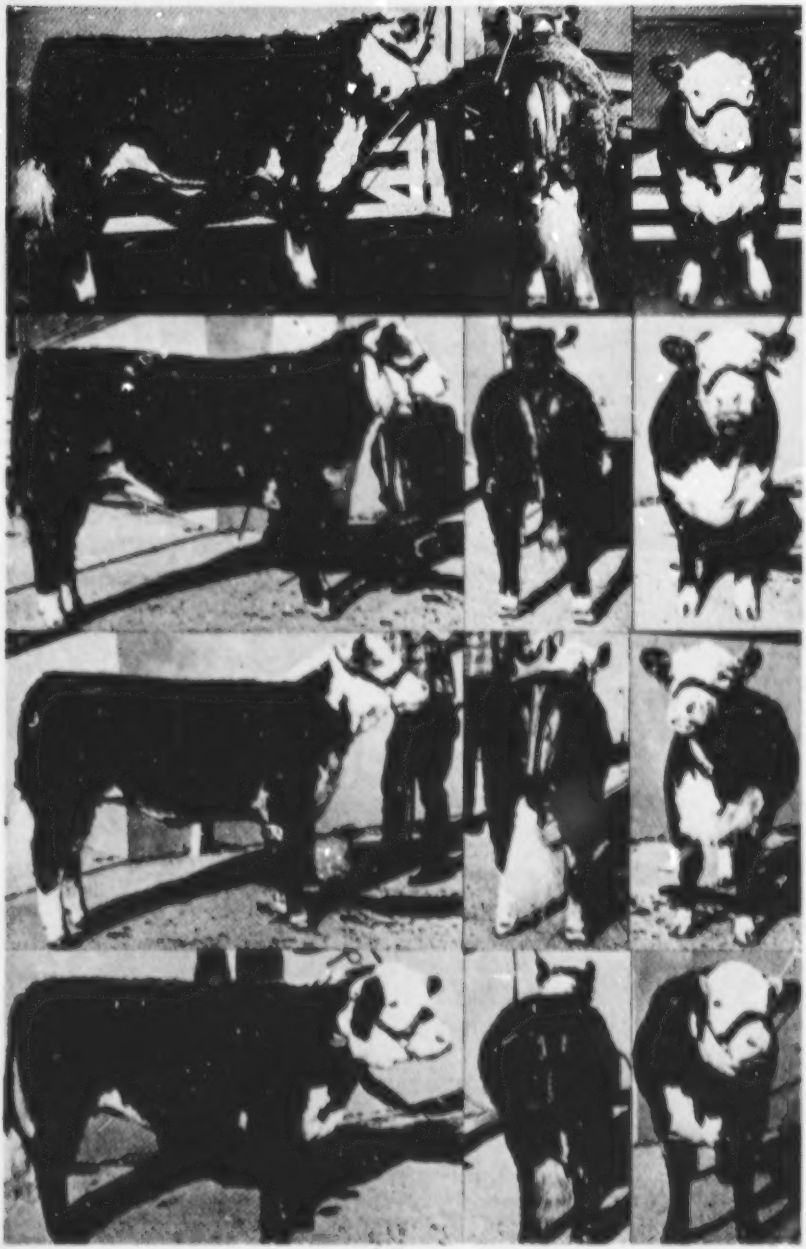

Figure 23. A sample class of Polled Hereford Heifers.

GRADING SLAUGHTER CATTLE

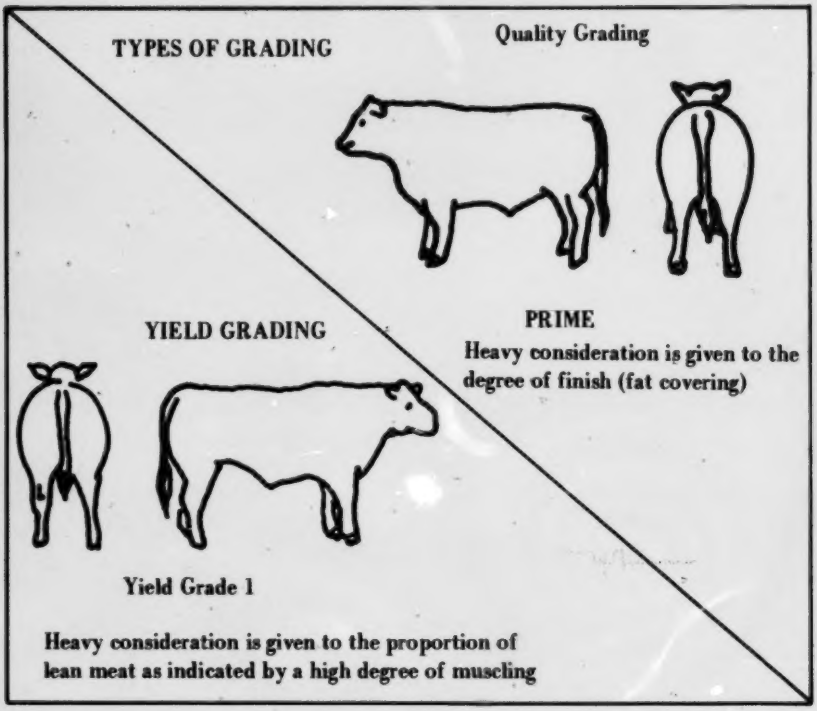
TYPES OF GRADING
Quality Grading
YIELD GRADING
PRIME
Heavy consideration is given to the degree of finish (fat covering)
Yield Grade 1
Heavy consideration is given to the proportion of lean meat as indicated by a high degree of muscling

Figure 24. Grading and judging require a different type of analysis.

Introduction

Slaughter cattle are graded for both quality and quantity of lean meat. Quality is measured by the palatability (tenderness and tastiness) of the lean meat. The major observable indicator of quality grade when looking at a live steer is finish (fat covering). The best indication of quality next to tasting the cooked meat is to examine the carcass for marbling (the dispersion of fat in the lean). There are eight standard quality grades: prime, choice, good, standard, commercial, utility, cutter, and canner. You will be concerned with only the top four grades–prime, choice, good, and standard.

The second type of grading used for slaughter cattle is yield grading. As the name implies, yield grades are based on yield–yield of lean meat. Again the best indication of yield is the carcass. But since the animal must be purchased live, we must estimate yield by examining the live animal. The best indicators are muscling and fatness. Generally speaking the more muscle and the less fat the better the yield grade. Yield grades are 1, 2, 3, 4, and 5. Note that yield grade 1 is considered the best grade.

Determining Degree of Finish

One of the best ways to determine the degree of finish on cattle is to become familiar with the sequence in which fat is deposited on an animal. The order is usually as follows: first, the loin area; second, the brisket; and last, the cod or udder. See Figure 25.

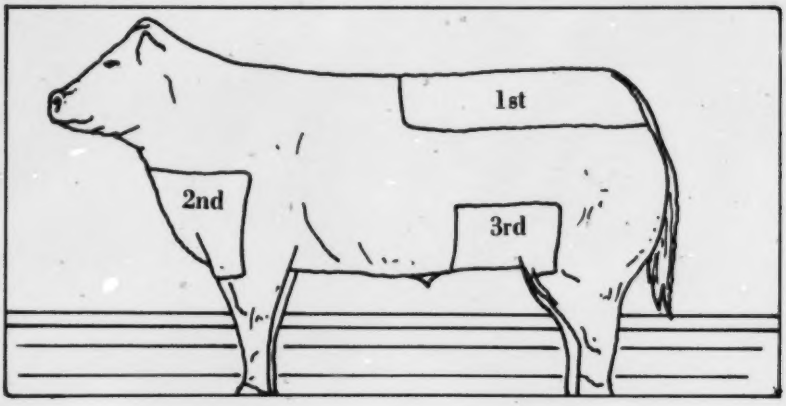

Figure 25. Typical sequence of fat deposition.

The following table provides a brief summary of fat covering and muscling by quality grades.

Table 1

Quality Grades by Fat Coverage and Degree of Muscling

USDA Grades	General fat covering back loins	Degree of fat covering briskets, flanks, cod, or udder	Muscling
Prime	Thick to moderately thick smooth	Full and firm with fat	Thick
Choice	Slightly thick	Moderately full	Thick to moderately thick
Good	Thin	Little or none	Slightly thick
Standard	Very thin	None	Thin

Cross Sectional Views of Three Steers

Both live cattle and carcasses are graded as to quality and yield. Actually the quality and yield grade assigned a steer or heifer should correspond exactly to the grade assigned to the carcass after slaughter. This is not always the case. It is sometimes difficult to estimate the grade of a live animal.

Studying the carcasses shown below may help you see the relationship between the shape of a live animal and the carcass yield.

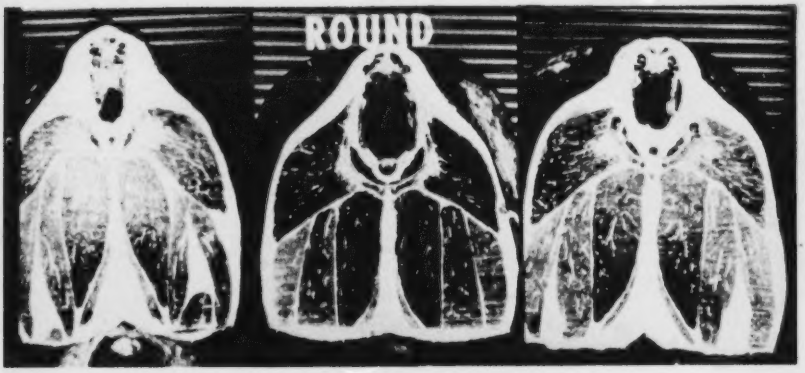

Figure 26. These cross sectional views show the superior muscling of the steer in the center.

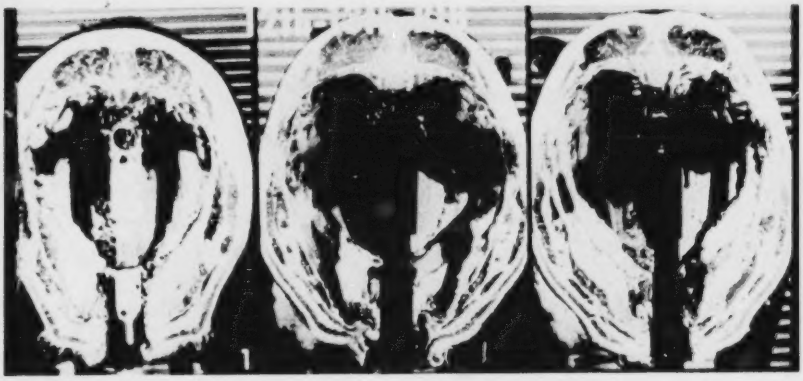

Figure 27. Again notice the superior muscling of the center steer at the 12th rib.

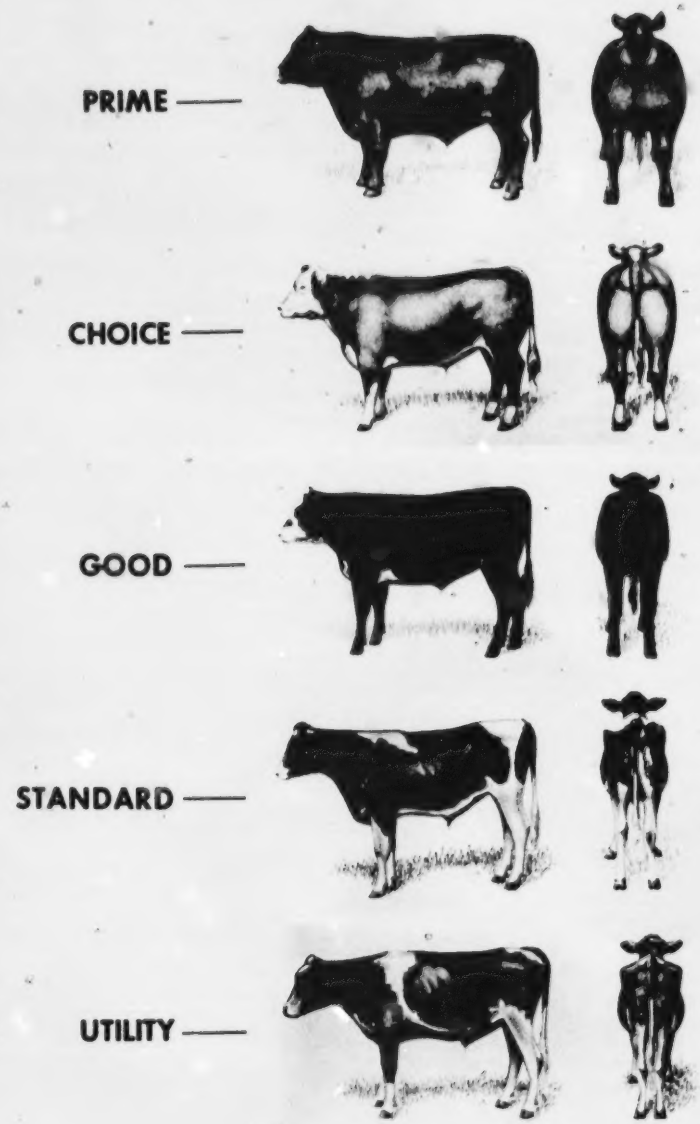

Figure 28. USDA Quality Grades.

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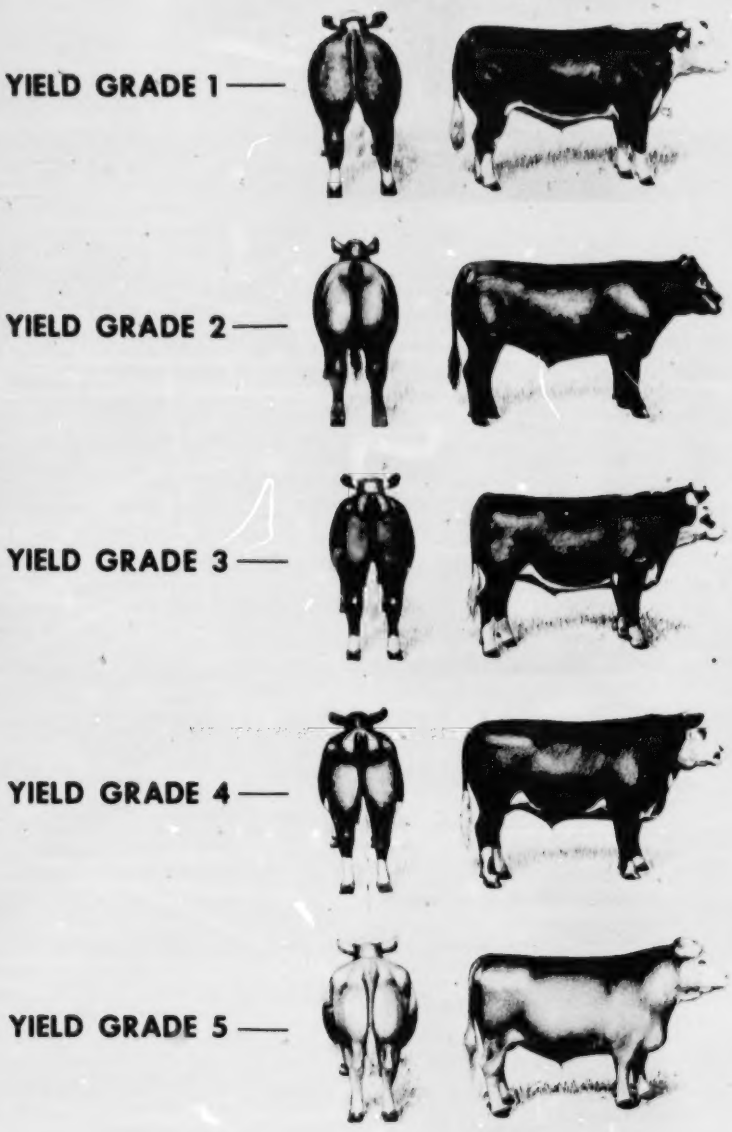

Figure 29. USDA Yield Grades.

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Using the Beef Cattle Grading Card

BEEF CATTLE GRADING CARD
(Slaughter Cattle)

Form 13

Class Name Slaughter Cattle Class Number

Contestant Number

Animal Number	PRIME		CHOICE		GOOD		STAND		CUTABILITY					SCORE		
	High	Low	High	Low	High	Low	High	Low	1	2	3	4	5	Quality	Yield	Total
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
TOTAL SCORE																

Figure 30. Beef Cattle Grading Card

Contestants will use this grading card for slaughter cattle. See figure 30.

Slaughter grades used in the contest are prime, choice, good and standard. No slaughter cattle over four years old will be used; therefore, the "commercial" grade is not shown.

For slaughter cattle, contestant is to place a check mark in the grade subdivision and also the correct cutability rating number for each animal. Six points are allowed for the correct grading of each animal.

A deduction of one point will be made for one half grade above or below the official grade. Three points are deducted for one full grade above or below the official grade and the score would be zero for more than one full grade above or below the official grade. Credit of four points will be allowed for the correct cutability rating. Two points will be allowed if animal is graded one grade above or one grade below the correct cutability grade.

Perfect score is 100 points.

GRADING FEEDER CATTLE

Introduction

Selecting a feeder animal that will grow into a high grade steer or heifer at slaughter age is very critical to the success of a cattle feeder. Often cattle feeders need to know more about selecting feeder cattle than about grading slaughter cattle. After all, when the calf is ready for market, it is too late to worry about grading--the animal either is or isn't of a certain grade and there is nothing the producer can do to change the animal. So, it is extremely important that the feeder learn to recognize the potential for a good slaughter animal in the young calf.

On the other hand, perhaps one needs a mental image of a top grade slaughter animal in order to see the potential in a young calf.

How does one select feeder calves with the potential for making high grade calves at slaughter?

The three major factors to consider in grading feeder calves are:

1. Thriftiness
2. Frame size
3. Muscling

First, you must determine whether or not the calves are thrifty. Unthrifty calves are graded inferior. Thriftiness affects the ability of the animals to grow and fatten normally. Cattle must be thrifty in order to be eligible for the frame size and muscling thickness grades.

And second, if feeder cattle are thrifty, they are then graded by frame size into three categories as follows:

Grade Descriptions – Frame

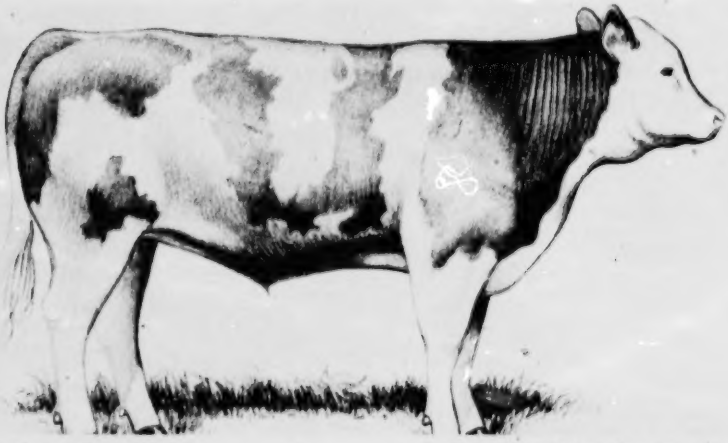

Figure 31. A large frame feeder calf.

a. Large Frame (L)

Feeder cattle which possess typical minimum qualifications for this grade are thrifty, have large frames, and are tall and long bodied for their age. Steers and heifers would not be expected to produce U.S. Choice carcasses (about 0.50 inch fat at twelfth rib) until their live weights exceed 1200 pounds and 1000 pounds, respectively.

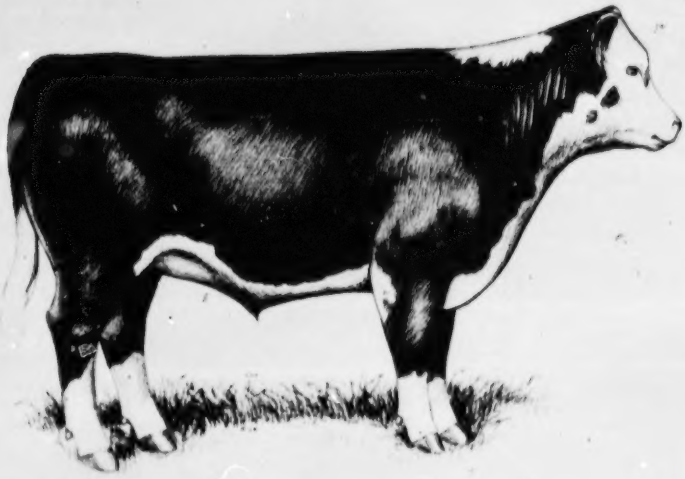

Figure 32. A medium frame feeder calf.

b. Medium Frame (M)

Feeder cattle which possess typical minimum qualifications for this grade are thrifty, have slightly large frames, and are slightly tall and slightly long bodied for their age. Steers and heifers would be expected to produce U.S. Choice carcasses (about 0.50 inch fat at twelfth rib) at live weights of 1000 to 1200 pounds and 850 to 1000 pounds, respectively.

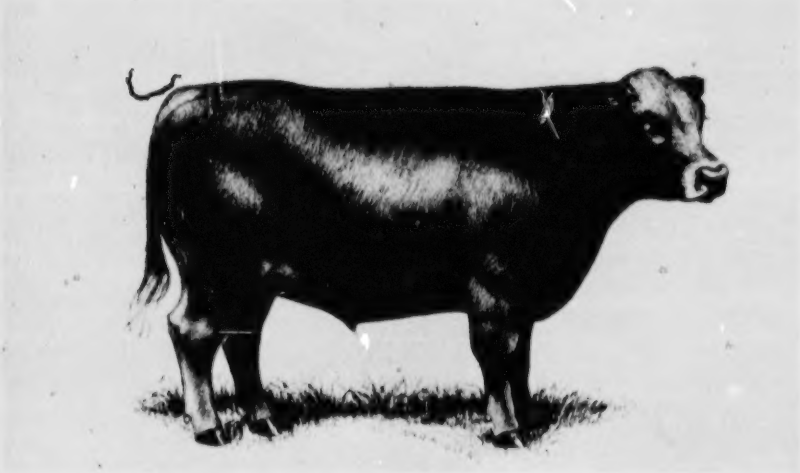

Figure 33. A small frame feeder calf.

c. Small Frame (S)

Feeder cattle included in this grade are thrifty, have small frames, and are shorter bodied and not as tall as specified as the minimum for Medium Frame grade. Steers and heifers would be expected to produce U.S. Choice carcasses (about 0.50 inch fat at twelfth rib) at live weights of less than 1000 pounds and 850 pounds, respectively.

And finally, thrifty calves are graded into three categories of muscling as follows:

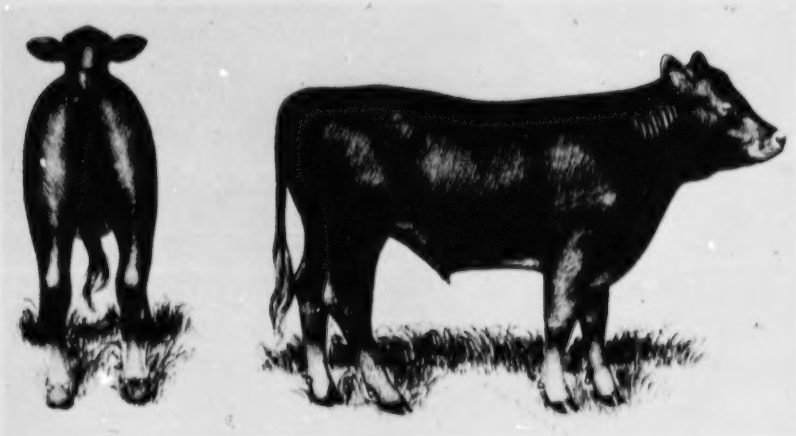

Figure 34. A U.S. No. 1 feeder calf.

a. No. 1

Feeder cattle which possess minumum qualifications for this grade usually show a high proportion of beef breeding. They must be thrifty and slightly thick throughout. They are slightly thick and full in the forearm and gaskin, showing a rounded appearance through the back and loin with moderate width between the legs, both front and rear. Cattle show this thickness with a slightly thin covering of fat; however, cattle eligible for this grade may carry varying degrees of fat.

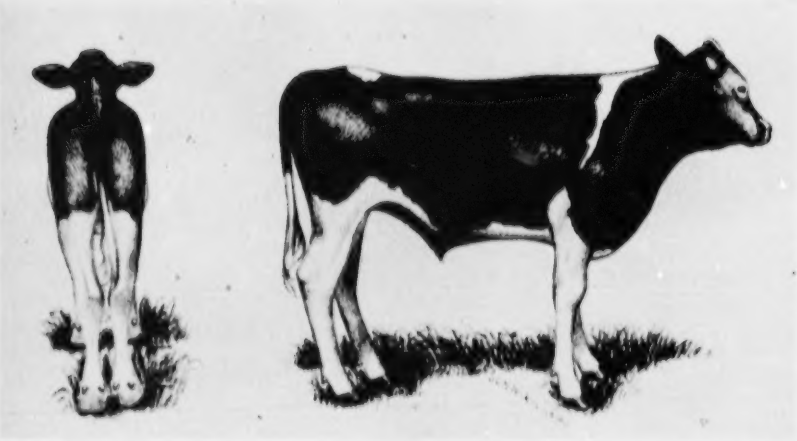

Figure 35. A U.S. No. 2 feeder calf.

b. No. 2

Feeder cattle which possess minimum qualifications for this grade are thrifty and are narrow through the forequarter and the middle part of the rounds. The forearm and gaskin are thin and the back and loin have a sunken appearance. The legs are set close together, both front and rear. Cattle show this narrowness with a slightly thin covering of fat; however, cattle eligible for this grade may carry varying degrees of fat.

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Figure 36. A U.S. No. 3 feeder calf.

c. No. 3

Feeder cattle included in this grade are thrifty animals which have less thickness than the minimum requirements specified for the No. 2 grade.

APPENDIX

TABLE 1

INFLUENCE OF CARCASS GRADE
ON DRESSING PERCENTAGE OF CATTLE

GRADE	AVERAGE DRESSING %	TYPICAL RANGE IN DRESSING %
PRIME	63	60-67
CHOICE	59	57-64
GOOD	57	55-61
STANDARD	55	53-58
COMMERCIAL	54	52-59
UTILITY	49	45-53
CUTTER	45	41-47
CANNER	42	37-44

Source: Stewart H. Fowler. The Marketing of Livestock and Meat. Danville, Illinois: The Interstate Printers and Publishers, 1961, p. 139.

TABLE 2

PERCENT OF CARCASS WEIGHT IN BONELESS, CLOSELY TRIMMED RETAIL CUTS FROM ROUND, LOIN, RIB AND CHUCK FOR CORRESPONDING YIELD GRADES

YIELD GRADE	YIELD OF CUTS
1.0 - 1.9	54.6 - 52.6
2.0 - 2.9	52.3 - 50.3
3.0 - 3.9	50.0 - 48.0
4.0 - 4.9	47.7 - 45.7
5.0 - 5.9	45.4 - 43.3

Source: Adapted by Professors Dale L. Handlin and George C. Skelley of the Animal Science Department of Clemson University, Clemson, S.C., from information provided by the USDA.

TABLE 3

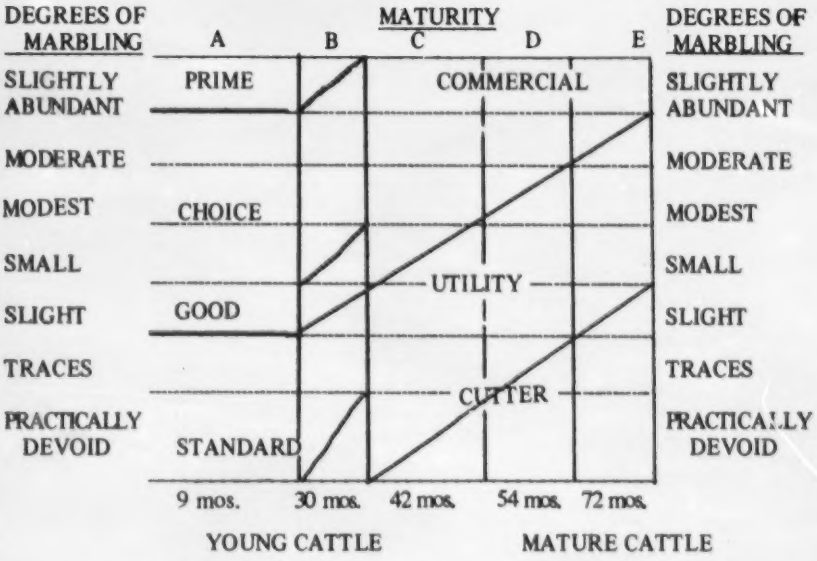
TYPICAL ESTIMATES OF RIBEYE AREA IN BEEF STEERS BASED ON LIVE WEIGHT AND APPRAISAL OF MUSCLING

NO.	LIVE WEIGHT	RELATIVE MUSCLING APPRAISAL	EST. RIB-EYE AREA/ 100 LBS. LIVE WT.	EST. TOTAL RIBEYE AREA	RIBEYE AREA/100 LBS. OF 600 LB. CARCASS
1	1000	HEAVILY	1.2	12.0	2.00
2	1000	AVERAGE	1.0	10.0	1.66
3	1000	LIGHT	0.8	8.0	1.33

Source: Adapted by Professors Dale L. Handlin and George C. Skelley of the Animal Science Department of Clemson University, Clemson, S.C., from information provided by the USDA.

TABLE 4

THE RELATIONSHIP BETWEEN MARBLING, MATURITY AND QUALITY GRADE



Source: Adapted by Professors Dale L. Handlin and George C. Skelley of the Animal Science Department of Clemson University, Clemson, S.C., from information provided by the USDA.

TABLE 5

DETERMINING YIELD GRADE OF BEEF CARCASSES

I. Determine a PRELIMINARY YIELD GRADE from the following schedule:

Thickness of Fat Over Ribeye	Preliminary Yield Grade *
.1 inch	2.25
.2	2.50
.3	2.75
.4	3.00
.5	3.25
.6	3.50
.7	3.75
.8	4.00
.9	4.25
1.0	4.50
1.1	4.75
1.2	5.00
1.3	5.25
1.4	5.50

*For carcasses with 3.5 percent kidney fat and having a carcass weight of ribeye relationship indicated by the schedule on the following page.

II. Determine the FINAL YIELD GRADE (1 to 5) by adjusting the preliminary yield grade, as necessary, for variation in kidney fat from 3.5 percent and for variations in area of ribeye from the carcass weight-area of ribeye schedule.

Rate of adjustment for area ribeye:
For each square inch more than area indicated in the carcass weight-area of ribeye schedule, subtract .3 of a grade from the preliminary yield grade.
For each square inch less than area indicated in the carcass weight-area of ribeye schedule, add .3 of a grade to the preliminary yield grade.

Rate of adjustment for percent of kidney fat:
For each percent of kidney fat more than 3.5 percent, add .2 of a grade to the preliminary yield grade.
For each percent of kidney fat less than 3.5 percent, subtract .2 of a grade from the preliminary yield grade.

TABLE 5 (continued)

CARCASS WEIGHT-AREA OF RIBEYE SCHEDULE

Carcass Weight			Area of Ribeye
350 lbs			8.0 sq in
375			8.3
400			8.6
425			8.9
450			9.2
500			9.8
525	Guide to area for		10.1
550	other weights:		10.4
575	600-608 lbs	11.0 sq in	10.7
600	609-616	11.1	11.0
625	617-624	11.2	11.3
650	625-633	11.3	11.6
675			11.9
700			12.2
725			12.5
750			12.8
775			13.1
800			13.4
825			13.7
850			14.0
875			14.3
900			14.6
925			14.9
950			15.2
975			15.5
1000			15.8
1025			16.1
1050			16.4
1075			16.7
1100			17.0
1125			17.3
1150			17.6

The combined effect of carcass weight and area of ribeye on yield grade is the same at all combinations indicated by the schedule.

Source: Adapted by Professors Dale L. Handlin and George C. Skelley of the Animal Science Department of Clemson University, Clemson, S.C., from information provided by the USDA.

TABLE 6

PERCENTAGE OF SLAUGHTER CATTLE BY GRADE

USDA GRADES	PERCENTAGE
PRIME	4.0
CHOICE	48.6
GOOD	18.4
STANDARD	7.2
COMMERCIAL	4.4
UTILITY	7.6
CUTTER	9.8
CANNER	

Source: Adapted by Professors Dale L. Handlin and George C. Skelley of the Animal Science Department of Clemson University, Clemson, S.C., from information provided by the USDA.

TABLE 7

FAT THICKNESS RELATIVE TO PRELIMINARY YIELD GRADE

FAT THICKNESS	PRELIMINARY YIELD GRADE
0.00 inch	2.0
0.20 inch	2.5
0.40 inch	3.0
0.60 inch	3.5
0.80 inch	4.0
1.00 inch	4.5
1.20 inches	5.0
1.40 inches	5.5

Source: Adapted by Professors Dale L. Handlin and George C. Skelley of the Animal Science Department of Clemson University, Clemson, S.C., from information provided by the USDA.